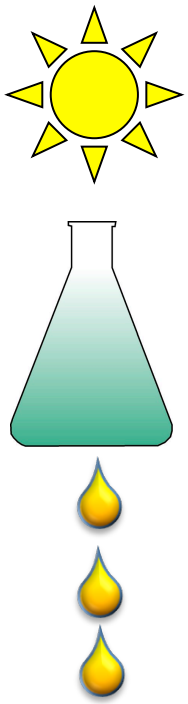
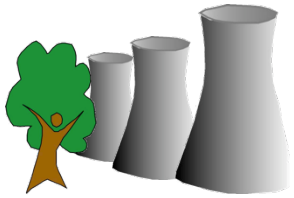
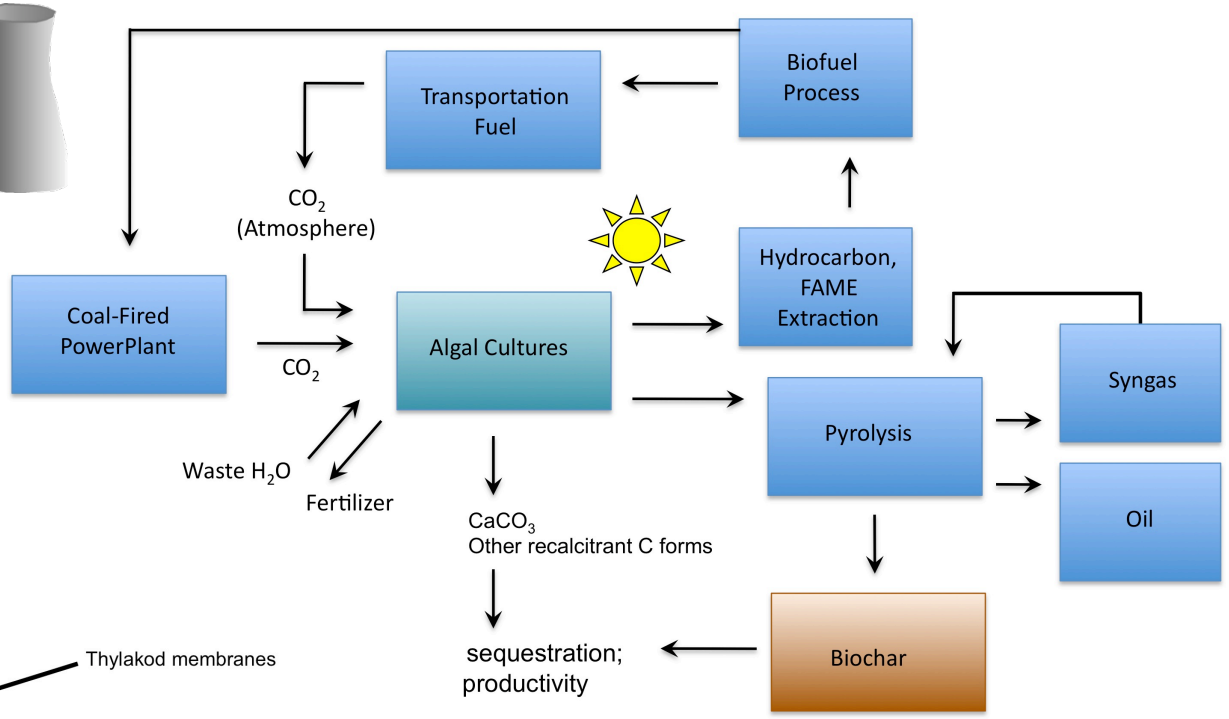
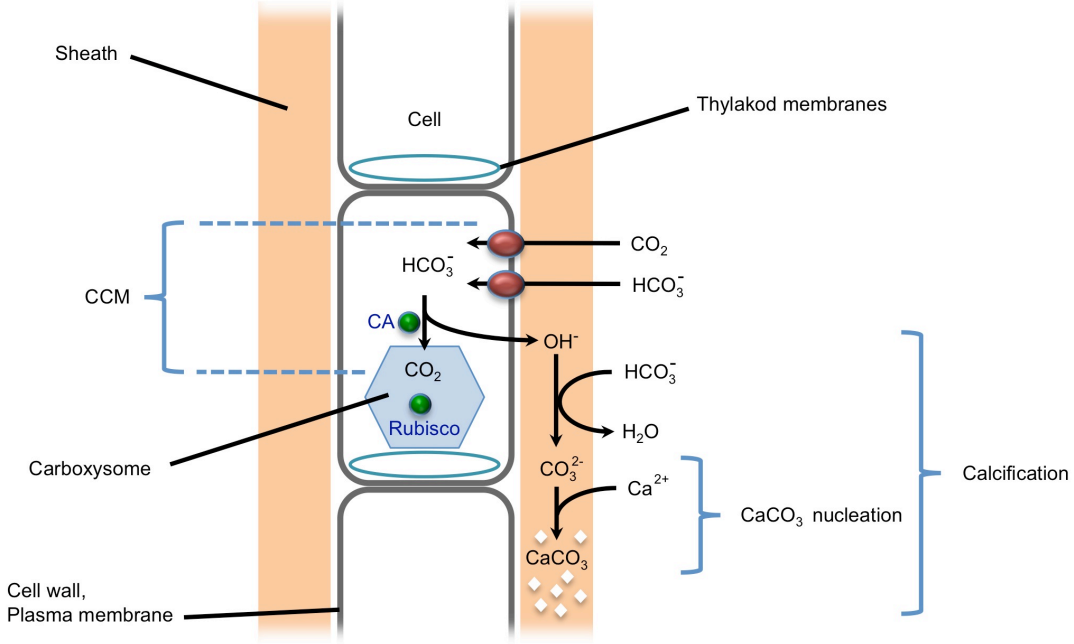
Christer Jansson, LBNL

Algal cultures for biofuel, C capture and biosequestration









Christer Jansson, LBNL

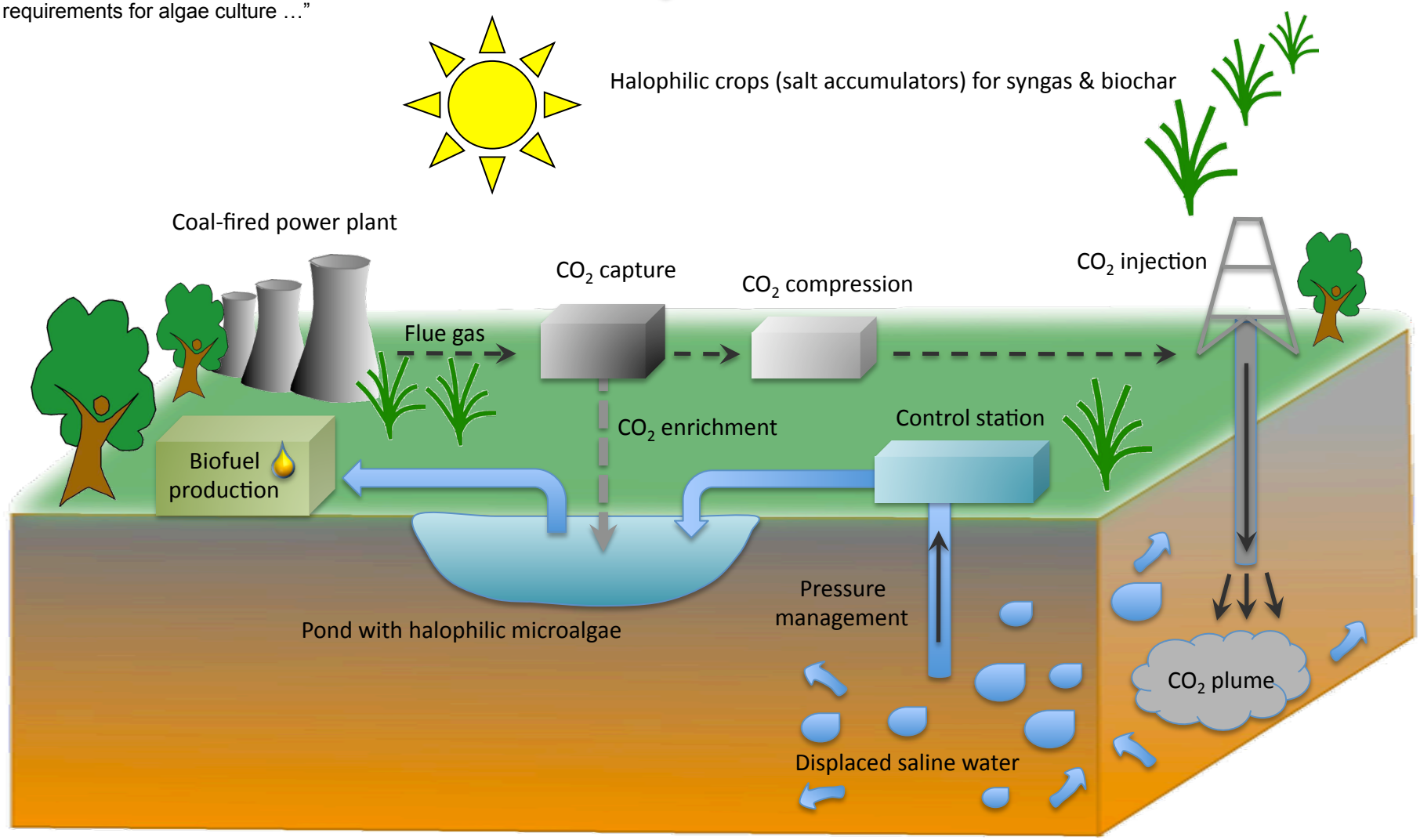
Algae and CCS

"… it takes 600 gallons of water to drive a mile on ethanol"

"Furthermore the algae have to be able to grow in saline water because of the very large water requirements for algae culture …"

Algal cultures with halophilic (& thermotolerant) strains

- Capture CO_2 from power plant
- Use saline water displaced from CO_2 injections
- Produce hydrocarbons, biodiesel, butanol that offset fossil fuel demands
- Produce recalcitrant C forms for long-term C sequestration



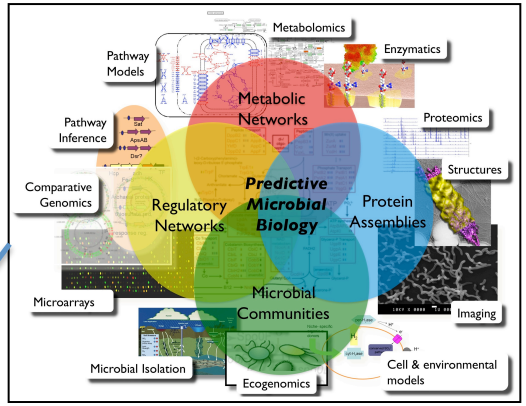
Christer Jansson, LBNL

The Berkeley Algal Science Center

Helios

CCS Hub

LBNL-Scripps-JGI Technology Pipeline



Berkeley Algal Science Center (BASC)

- Sequencing & annotations of algal genomes
- Algal phenomics
- Algal community structure
- Maximizing phtosynthetic carbon uptake
- Metabolic modeling
- High-throughput metabolic screening
- Host-pathogen interactions
- Biofuel production: Hydrocarbons, biodiesel
- Carbon sequestration

SFAs

JBEI

Sapphire

LDRD Efforts